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TRANSMITTAL FORM

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Application No.	09/728,072
Filing Date	November 30, 2000
First Named Inventor	Eric Graves
Art Unit	2676
Examiner Name	Rahmjoo, Manuchehr
Total Number of Pages in This Submission	70
Attorney Docket Number	4860P2555

ENCLOSURES *(check all that apply)*

- [x] Fee Transmittal Form
  - [x] Fee Attached
- [ ] Amendment / Response
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  - [ ] Affidavits/declaration(s)
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Lehua Wang, Reg. No. 48,023 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Signature	Lehua Wang
Date	SEP 7, 2004

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FEE TRANSMITTAL for FY 2004

Effective 10/01/2004. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT ($) 330.00

Complete if Known	
Application Number	09/728,072
Filing Date	November 30, 2000
First Named Inventor	Eric Graves
Examiner Name	Rahmjoo, Manucher
Art Unit	2676
Attorney Docket No.	4860P255

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None
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Deposit Account Number: 02-2666

Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($)

2. EXTRA CLAIM FEES

			Extra Claims		Fee from below		Fee Paid
Total Claims	36	- 36** =	0	X	18.00	=	$0.00
Independent Claims	4	- 4** =	0	X	86.00	=	$0.00
Multiple Dependent						=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple Dependent claim, if not paid
1204	86	2204	43	**Reissue independent claims over original patent
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0.00

**or number previously paid, if greater, For Reissues, see below

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
2053	130	2053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1404	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	2451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	2460	130	Petitions to the Commissioner	
1807	50	1807	50	Prosessing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	1809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

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SUBTOTAL (3) ($) 330.00

SUBMITTED BY

Complete (if applicable)

Name (Print/Type)	Lehua Wang	Registration No. (Attorney/Agent)	48,023	Telephone	(408) 720-8300
Signature	Lehua Wang			Date	9/7/04

Based on PTO/SB/17 (10-03) as modified by Blakely, Sokoloff, Taylor & Zafman (wlr) 02/10/2004.
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Attorney Docket No. 04860.P2555

APPEAL BRIEF

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Eric Graves, et al.

Application No.: 09/728,072

Filing Date: November 30, 2000

For: Mechanism for Color Space Neutral (Video) Effects Scripting Engine

Examiner: Rahmjoo, Manucher
Art Unit: 2676

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APPEAL BRIEF

Sir:

Applicant hereby submits this Appeal Brief in support of its appeal from a final decision of Examiner in the Office Action mailed April 5, 2004 in the above-captioned case. This Appeal Brief is hereby submitted in triplicate pursuant to 37 C.F.R. §1.192(a). The Appellant respectfully requests consideration of this appeal by the Board of Patent Appeals and Interferences for allowance of the above-identified patent application.

09/09/2004 SSESHE1 00000088 09728072
01 FC:1402 330.00 OP

1. REAL PARTY IN INTEREST

The real party in interest is the assignee of the entire right, title, and interest in and to the above-referenced patent application, Apple Computer, Inc. ("Assignee"), a California corporation having a place of business at 1 Infinite Loop, Cupertino, California 95014.

2. RELATED APPEALS AND INTERFERENCES

To the best knowledge of Appellant, there are no appeals or interferences related to the present appeal that will directly affect, be directly affected by, or have a bearing on the decision of the Board of Patent Appeals and Interferences in the instant appeal.

3. STATUS OF CLAIMS

Claims 1-72 are pending. No claims were allowed.

Claims 1-72, the subject of this appeal, were finally rejected under 35 U.S.C. 112, first paragraph, for containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 37-72, the subject of this appeal, were finally rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-72, the subject of this appeal, were finally rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480).

Examiner's decisions on claims 1-72 are appealed.

4. STATUS OF AMENDMENTS

No amendment has been filed subsequent to the final rejection of the Office Action mailed April 5, 2004.

5. SUMMARY OF INVENTION

This invention relates generally to the field of computer graphics, more specifically to the processing of images using scripts and a scripting engine.

In one embodiment of the present invention, a command is retrieved from a script containing one or more commands written for a first color space. The command is associated with zero or more input buffers and zero or more output buffers. The command has zero or more parameters. A behavior of the command in the first color space and in a second color space is determined. The behavior comprises one of unique behavior, transparent behavior, and different behavior. The command has the unique behavior when the command only operates in the first color space. The command has the transparent behavior when the command generates similar results in the first color space and in the second color space. The command has the different behavior when the command generates different results in the first color space and in the second color space. Using the behavior of the command, an operation associated with the command is processed. The operation is processed in a preferred format based on current formats of the input buffers. See, for example, page 4, lines 4-16, the specification.

In one embodiment of the present invention, a scripting engine is capable of accepting scripts written in different formats, such as RGB, YUV, or a combination of RGB and YUV (see, e.g., lines 12-14 on page 8 of the specification). The image processing commands in a script are examined to determine a best approach to perform the image processing operations associated with these commands (see, e.g., lines 24-26 on page 8 of the specification). The processing of the commands is based on the recognition that some image processing

commands can be performed in the RGB color space (i.e., first color space) or in the YUV color space (i.e., second color space) (see, e.g., lines 6-10 on page 9 of the specification). The image-processing commands in one group produce no difference in visual results regardless whether the commands are performed in the RGB color space or in the YUV color space; and these commands are referred to as "transparent" commands (see, e.g., page 9, lines 11-15, the specification). The image-processing commands in another group produce a difference in visual results when the commands are performed in the RGB color space and in the YUV color space; and these commands are referred to as "different" commands (see, e.g., page 9, lines 15-18, the specification). The image-processing commands in a further group work only in the RGB color space (these commands do not work in the YUV color space) (see, e.g., page 9, lines 23-25, the specification); and these commands are "unique" (see, e.g., page 14, lines 7-8, the specification). In one embodiment of the present invention, a command in a script is processed according to the group of commands it belongs to. For example, the flow diagram blocks 235 and 245 of Figure 2 of the present application show the processing of a command (instruction) based on the classification according to the categories of "transparent", "different" and "unique". The "yes" branch of blocks 235 and 245 correspond to "transparent", "different"; and, the description on page 14, lines 7-8, of the specification shows that the other branch, which is not "transparent" and not "different", is for "unique" commands.

6. ISSUES

The issues presented on this appeal are:

Issue A) whether the rejection under 35 U.S.C. 112, first paragraph, for claims 1-36 is proper;

Issue B) whether the subject matter recited in claims 37-72 is described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention;

Issue C) whether claims 37-72 are indefinite under 35 U.S.C. 112, second paragraph; and

Issue D) whether the disclosure of MacInnis (U.S. Patent No. 6,501,480) anticipates claims 1-72.

7. GROUPING OF CLAIMS

Applicant does not wish the rejected claims to stand or fall together on this appeal. For the purpose of presenting the arguments, Applicant wishes to group the claims separately for each of the issues in a way as listed below.

Issue A) whether the rejection under 35 U.S.C. 112, first paragraph, for claims 1-36 is proper:

Group A1: Claims 1-36

Issue B) whether subject matter recited in claims 37-72 is described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention:

Group B1: Claims 55-63

Group B2: Claims 37-54 and 64-72

Issue C) whether claims 37-72 are in indefinite under 35 U.S.C. 112, second paragraph:

Group C1: Claims 37-45

Group C2: Claims 46-54

Group C3: Claims 55-63

Group C4: Claims 64-72

Issue D) whether the disclosure of MacInnis anticipates claims 1-72:

Group D1: Claim 1

Group D2: Claims 10, 19, 28

Group D3: Claims 37, 46

Group D4: Claim 55

Group D5: Claim 64

Group D6: Claims 2, 11, 20, 29, 38, 47, 56, 65

Group D7: Claims 3, 12, 21, 30, 39, 48, 57, 66

Group D8: Claims 4, 13, 22, 31, 40, 49, 58, 67

Group D9: Claims 5, 14, 23, 32, 41, 50, 59, 68

Group D10: Claims 6, 15, 24, 33, 42, 51, 60, 69

Group D11: Claims 7, 16, 25, 34, 43, 52, 61, 70

Group D12: Claims 8, 17, 26, 35, 44, 53, 62, 71

Group D13: Claims 9, 18, 27, 36, 45, 54, 63, 72

8. ARGUMENT

8.1 Overview

An overview of at least some of the embodiments of the present invention is presented with references to the specification of the present application showing the support in written description. The drawing and description support the limitations recited in the pending claims.

At least one embodiment of the present invention relates specifically to the processing of images using scripts and a scripting engine (see, e.g., page 2, lines 6-9, the specification). In one embodiment of the present invention, a scripting engine is capable of accepting scripts written in different formats, such as RGB, YUV, or a combination of RGB and YUV (see, e.g., lines 12-14 on page 8 of the specification). Regarding scripts and a scripting engine, the specification (page 6, lines 9-14) shows:

> "Scripts generally consist of building blocks that are image processing commands (e.g., fill, blend, etc.). Each image processing command may require one or more input and output buffers. The input and output buffers are used to store the images. It is the scripting engine that parses the image processing command and obtains the buffers to be used with that image processing command."

Thus, it is understood that the scripting engine parses and interprets the commands in a script to perform operations according to the interpretation of the commands. In this context, a person skilled in the art understands the meaning and the scope of the terms, such as "script" and "command". For example, an image in RGB format is neither a script nor a command.

In one embodiment of the present invention, the image processing commands in a script are examined to determine a best approach to perform the image processing operations associated with these commands (see, e.g., lines 24-26 on page 8 of the specification). The image processing commands may be categorized in different groups. For example, the image-processing commands in one group produce no difference in visual results regardless whether the commands are performed in the RGB color space or in the YUV color space (see, e.g., page 9, lines 11-15, the specification); the image-processing commands in another group produce a difference in visual results when the commands are performed in the RGB color space and in the YUV color space (see, e.g., page 9, lines 15-18, the specification); the

image-processing commands in a further group work only in the RGB color space (these commands do not work in the YUV color space) (see, e.g., page 9, lines 23-25, the specification). Thus, one person skilled in the art understands from the written description of the present application that at least some embodiments of the present invention involve the categorization of the image-processing commands.

In one embodiment of the present invention, a command in a script is processed according to the group of commands it belongs to. For example, Figure 2 clearly shows the processing of a command (instruction) based on the classification according to the categories of "transparent" and "different" and a further category that is not "transparent" and not "different". The specification shows that the further category that is not "transparent" and not "different" is "unique". For example, the description of Figure 2 on lines 7-8 on page 14 of the specification shows:

> "Going back to block 245, when the command is not a "different" command, then the command is "unique" to the RGB color space."

Since block 245 follows a "no" branch of block 235, the "no" branch of block 245 is for the category of "unique", which is not "transparent" and not "different". From blocks 230, 235 and 245 of Figure 2 and the associated description in the specification, one person skilled in the art can clearly see that the examined instruction of the script is processed according whether it is "yes" to test "transparent" (block 235), or "yes" to test "different" (block 245), or "no" to both tests "transparent" and "different", which corresponds to classifying the instruction into one of the three categories: "transparent", "different" and "unique". Thus, from blocks 235 and 245 of Figure 2 and lines 7-8 on page 14 of the specification a person skilled in the art understands that the behavior of the command of the script is classified / identified / categorized / determined as one of: "transparent", "different" and "unique".

Further, the specification (page 4, lines 7-14) shows:

> "A behavior of the command in the first color space and in a second color space is determined. The behavior comprises one of unique behavior, transparent behavior, and different behavior. The command has the unique behavior when the command only operates in the first color space. The command has the transparent behavior when the command generates similar results in the first color space and in the second color space. The command has the different behavior when the command generates different results in the first color space and in the second color space."

From the description of the present application, a person skilled in the art can readily recognize the meaning of the terms "transparent", "different" and "unique" for the categorization of the behavior of the commands of a script. Further, at least some of the pending claims explicitly recite certain aspects of the terms "transparent", "different" and "unique."

8.2 Issue A) whether the rejection under 35 U.S.C. 112, first paragraph, for claims 1-36 is proper:

8.2.1 Group A1: Claims 1-36

Although claims 1-72 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, no particular reason was provided for the rejection of claims 1-36 under 35 U.S.C. 112, first paragraph. The reasons cited for the rejection of claims 37-72 under 35 U.S.C. 112, first paragraph, do not apply to the claims 1-36.

Further, the previous Office Action, mailed December 17, 2003, did not have a rejection under 35 U.S.C. 112, first paragraph, for claims 1-36, which have not been amended since the previous Office Action was mailed December 17, 2003. The Final Office

Action mailed April 5, 2004 rejected claims 1-72 U.S.C. 112, first paragraph without specifying any particular reason for the rejection under 35 U.S.C. 112, first paragraph, for claims 1-36. Thus, it appears a typographic error, in the rejection under 35 U.S.C. 112, first paragraph, to indicate claims 1-72 instead of claims 36-72. Applicant respectfully submits that the rejection under 35 U.S.C. 112, first paragraph, for claims 1-36 is improper.

8.3 Issue B) whether the subject matter recited in claims 37-72 is described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention:

Claims 37-72 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, for reciting "the processor classifying the first command" in claim 55 and "the first command as one of" in claims 37, 46, 55 and 64. Applicant respectfully disagrees.

8.3.1 Group B1: Claims 55-63

Claims 55-63 were rejected under 35 U.S.C. 112, first paragraph, because "the classification step is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention" and "the first command is not described in the specification as being "as one of" in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." Applicant respectfully disagrees.

For example, claim 55 recites:

55. A data processing system, comprising:
memory storing a script written for a first color space;

a processor coupled with the memory, the process retrieving a first command from the script stored in the memory, in response to the processor classifying the first command as one of:

operating only in the first color space,

generating similar results in the first color space and in a second color space, and

generating different results in the first color space and in the second color space,

the processor processing an operation associated with the first command in a preferred color space according to a result of classifying the first command.

Applicant respectfully submits that the specification clearly shows the feature of "classifying the first command as one of". A very detailed description about the classification is provided in the specification of the present application, as briefly discussed above in the overview section (see also, for example, blocks 235 and 245 of Figure 2 and lines 7-8 on page 14 of the specification. Further evidences in the specification showing that the inventors had possession of the claimed invention are discussed in detail below.

The specification of the present application has a clear description of categorizing the commands into different groups (see, e.g., line 11 of page 9 through line 2 of page 10 of the specification). Further, the specification, lines 20-22 on page 10, shows:

> "At block 235, a determination is made to see if the image processing command is a "transparent" command -- one which does not depend on the color space and can be performed in either color space."

Further, the specification, lines 12-15 on page 9, shows:

"With a first group, there is no difference in visual results regardless whether the commands are performed in the RGB color space or in the YUV color space. These image-processing commands in the first group are referred to as "transparent" commands."

Thus, an answer of "yes" to block 235 of Figure 2 clearly classifies the command as a "transparent" command that generates similar results in both color spaces (e.g., in both RGB and YUV).

The specification, lines 3-6 on page 12, shows:

"Going back to block 235, if the command is not a "transparent" command, the flow moves to block 245. Here, a determination is made to see if the command is a "different" command -- one which may have different output results depending upon the colorspace it is performed in."

Thus, an answer of "yes" to block 245 of Figure 2 clearly classifies the command as a "different" command that generates different results in the different color spaces (e.g., in RGB and in YUV).

The specification, lines 7-10 on page 14, shows:

"Going back to block 245, when the command is not a "different" command, then the command is "unique" to the RGB color space. In this case, the command makes sense only in the RGB color space and can only be processed in the RGB color space with input buffers in the RGB format"

Thus, an answer of "no" to block 245 of Figure 2 clearly classifies the command as a "unique" command that operates only in a color space (e.g., only in RGB).

Further, the specification (e.g., page 20, lines 14-17) describes a computer system with a processor, as illustrated in Figure 5, for performing the methods of embodiments of

the present invention. Thus, from the description of the present application, a person skilled in the art understood that, when a script engine is implemented on a computer system as shown in Figure 5, the processor performs the classification operation of blocks 235 and 245.

Blocks 235 and 245 of Figure 2 also very clearly show that the inspected instruction is classified as one of the three possible categories, corresponding to the "yes" branch of block 235, the "yes" branch of block 245, and the "no" branch of block 245. Thus, "as one of" is clearly described in the specification to clearly convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Thus, the description of the present application clearly shows that at the time the application was filed, the inventors had possession of the claimed invention as recited in claims 55-63.

8.3.2 Group B2: Claims 37-54 and 64-72

Claims 37-54 and 64-72 were rejected under 35 U.S.C. 112, first paragraph, because the first command is not described in the specification as being "as one of" in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant respectfully disagrees.

For example, claim 37 recites:

> 37. A machine implemented method, comprising:
> retrieving a first command from a script written for a first color space;
> determining the first command to be one of:
> operating only in the first color space,
> generating similar results in the first color space and in a second color space, and

generating different results in the first color space and in the second color space; and

processing an operation associated with the first command in a preferred color space according to a result of said determining.

Blocks 235 and 245 of Figure 2 very clearly show that the inspected instruction is determined to be one of the three possible categories, corresponding to the "yes" branch of decision block 235, the "yes" branch of decision block 245, and the "no" branch of decision block 245. A decision to flow to the "yes" branch of block 235 of Figure 2 clearly determines the command as a "transparent" command that generates similar results in both color spaces (e.g., in both RGB and YUV); a decision to flow to the "yes" branch block 245 of Figure 2 clearly determines the command as a "different" command that generates different results in the different color spaces (e.g., in RGB and in YUV); a decision to flow to the "no" branch block 245 of Figure 2 clearly determines the command as a "unique" command that operates only in a color space (e.g., only in RGB). Thus, the operation of blocks 235 and 245 clearly determines the command as one of: "unique" (e.g., operating only in RGB color space); "transparent" (e.g., generates similar results in both RGB and YUV color spaces); or "different" (e.g., generating different results in RGB and in YUV color spaces). Please also see the arguments presented in section **"8.3.1 Group B1".**

Further, the specification (page 4, lines 7-14) shows:

"A behavior of the command in the first color space and in a second color space is determined. The behavior comprises **one of** unique behavior, transparent behavior, and different behavior. The command has the unique behavior when the command only operates in the first color space. The command has the transparent behavior when the command generates similar results in the first color space and in the second color space. The command

has the different behavior when the command generates different results in the first color space and in the second color space."

Thus, "determining the first command to be one of" is clearly described in the specification to clearly convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

8.4 Issue C) whether claims 37-72 are in indefinite under 35 U.S.C. 112, second paragraph:

Claims 37-72 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Applicant respectfully disagrees.

8.4.1 Group C1: Claims 37-45

Claim 37 and its dependent claims were rejected for reciting "... according to a result of said determining" such that it is not clear from the claim language whether "processing an operation ... according to a result of said determining" step or "determining the first command" takes precedence.

Claim 37 recites:

37. A machine implemented method, comprising:
retrieving a first command from a script written for a first color space;
determining the first command to be one of:
operating only in the first color space,
generating similar results in the first color space and in a second color space, and
generating different results in the first color space and in the second color space; and
processing an operation associated with the first command in a preferred color space according to a result of said determining.

Applicant respectfully submits that claim 37 clearly recites the relation of "processing an operation ..." ***according to*** "a result of said determining". Said "processing an operation" is in accordance with *a result of* said "determining". It is understood that a result of said "determining" is not available before performing said "determining the first command to be one of ...". Thus, the relation between said "processing" and said "determining" is sufficiently clear; and the rejection of claims 37-45 for being indefinite is improper.

8.4.2 Group C2: Claims 46-54

Claim 46 and its dependent claims were rejected for reciting "... according to a result of said identifying" such that it is not clear from the claim language whether "processing an operation ... according to a result of said identifying" step or "identifying the first command" takes precedence.

Claim 46 recites:

> 46. A machine readable medium containing executable computer program instructions which when executed by a data processing system cause said system to perform a method, comprising:
> retrieving a first command from a script written for a first color space;
> identifying the first command as one of:
> operating only in the first color space,
> generating similar results in the first color space and in a second color space, and
> generating different results in the first color space and in the second color space; and
> processing an operation associated with the first command in a preferred color space according to a result of said identifying.

Applicant respectfully submits that claim 46 clearly recites the relation of "processing an operation ..." ***according to*** "a result of said identifying". Said "processing an operation" is

in accordance with *a result of* said "identifying". It is understood that a result of said "identifying" is not available before performing said "identifying the first command as one of: ...". Thus, the relation between said "processing" and said "determining" is sufficiently clear; and the rejection of claims 46-54 for being indefinite is improper.

8.4.3 Group C3: Claims 55-63

Claim 55 and its dependent claims were rejected for reciting "... according to a result of classifying ..." such that it is not clear from the claim language whether "the processor processing ... according to a result of classifying" step or "the processor classifying the first command" takes precedence.

Claim 55 recites:

55. A data processing system, comprising:
memory storing a script written for a first color space;
a processor coupled with the memory, the process retrieving a first command from the script stored in the memory, in response to the processor classifying the first command as one of:
operating only in the first color space,
generating similar results in the first color space and in a second color space, and
generating different results in the first color space and in the second color space,
the processor processing an operation associated with the first command in a preferred color space according to a result of classifying the first command.

Applicant respectfully submits that claim 55 clearly recites the limitation of "***in response to*** the processor classifying ...", "the processor processing an operation ..." ***according to*** "a result of classifying the first command". "The processor processing an operation" is *in*

accordance with a result of and *in response to* "the processor classifying ...". Thus, the relation between "the processor processing" and "the processor classifying" is very clear; and the rejection of claims 55-63 for being indefinite is improper.

8.4.4 Group C4: Claims 64-72

Claim 64 and its dependent claims were rejected for reciting "... according to a result of said means for examining ..." such that it is not clear from the claim language whether "examining to determine ... " step or "processing an operation ... according to a result of said means for examining" takes precedence.

Claim 64 recites:

64. A computer system, comprising:
means for retrieving a first command from a script written for a first color space;
means for examining to determine the first command is which one of:
operating only in the first color space,
generating similar results in the first color space and in a second color space, and
generating different results in the first color space and in the second color space; and
means for processing an operation associated with the first command in a preferred color space according to a result of said means for examining to determine.

Applicant respectfully submits that claim 64 clearly recites the relation of "means for processing an operation ..." ***according to*** "a result of said means for examining to determine". Said "means for processing an operation" operates in accordance with *a result of* said "said means for examining to determine". Thus, the relation between said

"processing" and said "determining" is sufficiently clear; and the rejection of claims 64-72 for being indefinite is improper.

8.5 Issue D) whether the disclosure of MacInnis anticipates claims 1-72:

8.5.1 Overview:

Claims 1-72 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees.

The disclosure of MacInnis is almost unrelated to the subject matter as claimed. MacInnis generally relates to integrated circuits and more particularly to an integrated circuit graphics display system (see, e.g., Col. 1, lines 39-41, MacInnis). MacInnis uses a Color Look Up Table (CLUT) to convert color information. The examiner was interpreting the variations of the Color Look Up Table (CLUT) output as corresponding to the term "behavior" (see, page 9, the fifth paragraph, Office Action Mailed April 5, 2004; and page 6, the second paragraph, Office Action Mailed December 17, 2003). Applicant respectfully submits that the examiner's interpretation is inappropriate. Further, the Office Action illogically took a large number of inconsistent views for the same limitation (e.g., the first command) that appears in different segments of a single claim.

At least one embodiment of the present invention relates specifically to the processing of images using scripts and a scripting engine (see, e.g., page 2, lines 6-9, the specification). The image processing commands in a script are examined to determine a best approach to perform the image processing operations associated with these commands (see, e.g., lines 24-26 on page 8 of the specification). The variations of the Color Look Up Table (CLUT) output has nothing to do with examining the image processing commands in a script to determine a best approach to perform the image processing operations associated with these commands. If the variations of the Color Look Up Table (CLUT) output were considered corresponding to the different behaviors of the commands of a script, one Color Look Up Table (CLUT)

output would be considered as a command retrieved from a script, which is clearly inappropriate.

Further, the actual "unique behavior", "different behavior" and "transparent behavior" relied upon by the Office Action cannot be appropriately characterized as the variations of the Color Look Up Table (CLUT) output.

Further, the scope of "unique", "transparent" and "different" behaviors of CLUTs of MacInnis, as identified by the Examiner, is completely different from, *without any overlap with*, the scope of the "unique", "transparent" and "different" behaviors of a command of a script as specified in claims 1-36.

Further, even if the examiner's interpretation were applied, MacInnis does not teach each and every aspect of the pending claims.

Figure 4 of MacInnis shows a graphics pipeline 80, which includes a graphics convert block 90 (e.g., Col. 6, lines 19-29, MacInnis). The graphics convert block 90 takes raw graphics data from the FIFO block 88 to convert the raw graphics data into a YUVa format (e.g., Col. 7, lines 13-15, MacInnis). The raw graphics data in the FIFO block 88 may be formatted through a color look up table (CLUT). Thus, graphics convert block 90 uses a CLUT to convert the raw graphics data into the YUVa format. In one embodiment of MacInnis (e.g., Col. 7, lines 34-35, MacInnis), only one CLUT is provided in the graphics pipeline 80. In an alternate embodiment of MacInnis (e.g., Col. 7, lines 35-37, MacInnis), multiple CLUTs are used to process different graphics windows having graphics data with different CLUT formats.

In MacInnis, a data structure called window descriptor contains parameters that describe and control each graphics window (e.g., Col. 11, lines 38-42, MacInnis). A window descriptor contains fields to specify "alpha type" and "alpha value" (e.g., Col. 13, lines 64-65, MacInnis). The alpha type determines how the alpha value of a pixel is determined in

converting from the raw graphics data to the YUVa format. For example, an alpha type of 00b can be specified to indicate that the alpha value of each pixel of the window is to be selected from chroma keying (e.g., Col. 14, lines 3-14); an alpha type of 01b can be specified to indicate that the alpha value of each pixel of the window is to be derived from the CLUT (e.g., Col. 14, lines 15-25). Chroma keying compares the color of each pixel to a reference color or to a range of possible colors; if the pixel matches the reference color, or if its color falls within the specified range of colors, then the pixel is determined to be transparent (Col. 14, lines 3-14, MacInnis)

In one embodiment of the present invention, a scripting engine is capable of accepting scripts written in different formats (e.g., RGB, YUV, or a combination of RGB and YUV). The image processing commands in the scripts are examined to determine a best approach to perform the image processing operations associated with these commands. The image processing commands may be categorized in different groups. For example, the image-processing commands in the one group produce no difference in visual results regardless whether the commands are performed in the RGB color space or in the YUV color space (see, e.g., page 9, lines 11-15, the specification); the image-processing commands in another group produce a difference in visual results regardless whether the commands are performed in the RGB color space or in the YUV color space (see, e.g., page 9, lines 15-18, the specification); the image-processing commands in a further group work only in the RGB color space (does not work in the YUV color space) (see, e.g., page 9, lines 23-25, the specification). In one embodiment of the present invention, a command in the script is processed according to the group of commands it belongs.

The terms "unique behavior", "transparent behavior", and "different behavior" have specific meanings in the context of the present application. For example, the specification (page 4, lines 4-16) shows that: the command has the unique behavior when the command

only operates in the first color space; the command has the transparent behavior when the command generates similar results in the first color space and in the second color space; and the command has the different behavior when the command generates different results in the first color space and in the second color space. Further, for example, claim 1 recites explicitly:

> "wherein the behavior of the first command is:
>
> unique when the first command operates only in the first color space,
>
> transparent when the first command generates similar results in the first color space and in a second color space, and
>
> different when the first command generates different results in the first color space and in the second color space"

MPEP 2106.II.C shows that:

> "Office personnel must rely on the applicant's disclosure to properly determine the meaning of terms used in the claims. *Markman v. Westview Instruments*, 52 F.3d 967, 980, 34 USPQ2d 1321, 1330 (Fed. Cir.) (*en banc*), *aff*'d, U.S. , 116 S. Ct. 1384 (1996). An applicant is entitled to be his or her own lexicographer, and in many instances will provide an explicit definition for certain terms used in the claims. Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999) (meaning of words used in a claim is not construed in a "lexicographic vacuum, but in the context of the specification and drawings."). Office personnel should determine if the original disclosure provides a definition consistent with any assertions made by applicant. See, e.g., *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) (inventor may define specific terms used to describe invention, but must do so "with reasonable clarity,

deliberateness, and precision" and, if done, must " 'set out his uncommon definition in some manner within the patent disclosure' so as to give one of ordinary skill in the art notice of the change" in meaning) (quoting *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1387-88, 21 USPQ2d 1383, 1386 (Fed. Cir. 1992)). Any special meaning assigned to a term "must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention." *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477, 45 USPQ2d 1429, 1432 (Fed. Cir. 1998). If an applicant does not define a term in the specification, that term will be given its "common meaning." *Paulsen*, at 30 F. 3d 1480, 31 USPQ2d at 1674."

Application respectfully submits that in the Office Action the interpretation of the meaning of the terms used in the claims is improper. The examiner failed to rely on the applicant's disclosure to properly determine the meaning of terms used in the claims. Instead, the examiner appeared to be his or her own lexicographer to construct the meanings of the terms based on the prior art references, completely ignoring "the context of the specification and drawings" and further ignoring some explicit limitations recited in the claims. Detailed analyses are provided below.

8.5.2 Group D1: Claim 1

Claim 1 was rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 1 recites:

1. A method, comprising:
   retrieving a first command from a script written for a first color space;
   determining a behavior of the first command, wherein the behavior of the first command is:

unique when the first command operates only in the first color space,

transparent when the first command generates similar results in the first color space and in a second color space, and

different when the first command generates different results in the first color space and in the second color space; and

processing an operation associated with the first command in a preferred color space according to the behavior of the first command.

The Office Action applied the elements of MacInnis in the following fashion.

"retrieving new CLUT data via DMA block" in MacInnis is applied as "retrieving a first command from a script written for a first color space" (see, e.g., paragraphs 1-2 on page 9, Office Action mailed April 5, 2004);

"recognizing only one CLUT in a graphics system", "transparent if the pixel falls within a range of possible colors", and "multiple CLUTs are used with different graphics windows having graphics data with different CLUT formats" in MacInnis are applied as

"determining a behavior of the first command, wherein the behavior of the first command is:

unique when the first command operates only in the first color space,

transparent when the first command generates similar results in the first color space and in a second color space, and

different when the first command generates different results in the first color space and in the second color space"

(see, e.g., the first paragraph on page 5, Office Action mailed April 5, 2004)

The Office Action (Page 5, the first paragraph, Office Action mailed April 25, 2004) pointed to Col. 7, lines 14-25 and Col. 9, lines 5-23 of MacInnis for the limitation of

> "processing an operation associated with the first command using the behavior of the first command, wherein the operation is processed in a preferred format based on current formats of the input buffers",

which was in the ***original*** claim 1 filed with the specification. However, claim 1 was amended in a response mailed July 23, 2003 (which was filed before the subsequent Office Actions of August 5, 2003, December 17, 2003, and April 5, 2004). The amendment of July 23, 2003 put the corresponding segment in the current form, which is:

> "processing an operation associated with the first command in a preferred color space <u>according to</u> the behavior of the first command."

The Applicant's response, mailed November 5, 2003, indicated that the Office Actions mailed August 5, 2003 recited the claim limitations of the originally filed claims, not the current pending claims. In response, the Office Action of December 17, 2003 asserted, "The final office action mailed on August 5, 2003 recites the claim limitations of the current pending claims" (see, page 6, the first paragraph, Office Action mailed December 17, 2003).

Therefore, in this appeal brief, it is respectfully assumed that the examiner pointed to Col. 7, lines 14-25 and Col. 9, lines 5-23 of MacInnis for the limitation of

> "processing an operation associated with the first command in a preferred color space <u>according to</u> the behavior of the first command."

Col. 7, lines 14-25 of MacInnis contains a description of the graphics converter block 90 which converts raw graphics data into a YUValpha (YUVa) format. The graphics converter block 90 accesses the color look-up table (CLUT) during the conversion (see, e.g., Col. 7,

lines 32-34, MacInnis). Col. 9, lines 5-23 of MacInnis contains a description of the display engine 58, which contains a graphics converter 134.

A person skilled in the art can see that there is no proper correspondence between the applied elements of MacInnis and the claim limitations. There is no indication that MacInnis teaches to determine the "behavior" of a command of a script and perform an operation associated with the command according to the "behavior" of the command. More details are provided below.

8.5.2.1: The overall scope and the terms "command" and "script"

Meaning of words used in a claim is not construed in a "lexicographic vacuum, but in the context of the specification and drawings".

The specification of the application shows:

> "The present invention relates generally to the field of computer graphics, more specifically to the processing of images using scripts and a scripting engine." (page 2, lines 7-8, of the specification)

Claim 1 recites "a first command from a script". A person skilled in the art can clearly see that the cited elements of MacInnis have nothing to do with "processing of images using scripts and a scripting engine". Reloading the data of a color look up table (CLUT) has no resemblance to receiving a command from a **script**.

Further, the application of the elements of MacInnis to the term "first command" is not consistent. In applying "retrieving new CLUT data via DMA block" to the limitation of "retrieving a first command from a script written for a first color space", it appears that the Office Action was considering "new CLUT data" as "a first command". However, in interpreting "the variations of the Color Look Up Table (CLUT) output as corresponding to the term "behavior" to apply "recognizing only one CLUT in a graphics system",

"transparent if the pixel falls within a range of possible colors", and "multiple CLUTs are used with different graphics windows having graphics data with different CLUT formats" to the limitation of

> "determining a behavior of the first command, wherein the behavior of the first command is:
> unique when the first command operates only in the first color space,
> transparent when the first command generates similar results in the first color space and in a second color space, and
> different when the first command generates different results in the first color space and in the second color space"

it appears that Office Action was considering "the output of CLUT" as "the first command".

It is understood that "the CLUT data" and "the output of CLUT" are different items. It is an error in the Office Action to consider "the CLUT data" as "a first command" and then consider "output of CLUT" as "the first command". When the Office Action pointed to the Col. 7, lines 14-25 and Col. 9, lines 5-23 of MacInnis for the limitation of

> "processing an operation associated with the first command in a preferred color space according to the behavior of the first command",

it is not clear what was considered by the Office Action as "the first command".

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The elements of MacInnis cannot be consistently applied for the term "first command" is a clear indication that MacInnis does not anticipate the subject matter of the claim.

Thus, at least for these reasons, the rejection of claim 1 under 35 U.S.C. §102(e) is improper. Further reasons are provided below.

8.5.2.2: The terms "behavior", "unique", "transparent" and "different"

Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999). The pending claims explicitly recite limitations on some of the terms used in the claims.

The scope of "unique", "transparent" and "different" behaviors of the CLUTs in MacInnis as interpreted by the Office is completely different from, *without any overlap with*, the scope of the "unique", "transparent" and "different" behaviors of a command of a script as specified in claims 1-36. For example, claim 1 specifies that "the behavior ... is: unique when ..., transparent when ..., and different when ...", more specifically,

> "determining a behavior of the first command, the behavior of the first command is:
> unique when the first command operates only in the first color space,
> transparent when the first command generates similar results in the first color space and in a second color space, and
> different when the first command generates different results in the first color space and in the second color space".

Clearly, in claim 1 the terms "unique", "transparent" and "different" are such that the behavior of the command is "unique when the first command operates only in the first color space", the behavior of the command is "transparent when the first command generates similar results in the first color space and in a second color space" and the behavior of the command is "different when the first command generates different results in the first color space and in the second color space". These limitations are explicitly recited in claim 1.

Applicant respectfully submits that in the Office Action the interpretation of the terms "unique", "transparent" and "different" does not conform to the explicitly recited limitations. It is improper to discard such explicitly recited limitations and construe the meaning of "unique", "transparent" and "different" out of "lexicographic vacuum." A detailed analysis is provided further below to show that the meaning of the terms "unique", "transparent" and "different" construed in the Office Action, in view of the cited reference and applied elements of the cited reference for the rejection, has nothing to do with the meaning of the corresponding terms in the pending claims.

8.5.2.2.1: The term "unique"

According to claim 1, "the behavior of the first command is: unique when the first command operates only in the first color space, transparent when..., different when ...".

The Office Action considered that "recognizing only one CLUT in a graphics system" corresponds to the term "unique", based the description of MacInnis that "In one embodiment of the present invention, there is only one CLUT" (Col. 7, lines 34-35, MacInnis). The examiner argued that MacInnis teaches such an embodiment effectively "acknowledges" the presence of ONLY ONE CLUT. Such an acknowledgement of the presence of ONLY ONE CLUT was considered as "recognizing only one CLUT in a graphics system".

However, the fact that MacInnis et al., as inventors of U.S. Patent 6,501,480, "recognized" there is only one CLUT in a graphics system in one embodiment of the U.S. Patent 6,501,480 has nothing to do with determining a behavior of "a first command" retrieved from a script written for "a first color space", where the behavior of "the first command" is unique when the first command operates only in the "first color space".

Further, in the assertion of "recognizing only one CLUT in a graphics system", it appears that the behavior of the graphics system is considered. The graphics system of one

embodiment of the MacInnis has a property of uniqueness in the sense of having only one CLUT. This is vastly different from the explicit limitation of "unique when the first command operates only in the first color space". The sense of uniqueness because of operating only in a particular color space is clearly different from the sense of uniqueness because of the unique physical presence.

Furthermore, when the behavior of "a graphics system" is considered corresponding to the behavior of "the first command", it is apparent that the Office Action was considering "a graphics system" as "the first command" for this claim limitation. Thus, the Office Action added a further inconsistent way of applying different elements of MacInnis as "the first command", in addition to applying "the CLUT data" and "the output of CLUT" as "the first command".

8.5.2.2.2: The term "transparent"

According to claim 1, "the behavior of the first command is: unique when..., transparent when the first command generates similar results in the first color space and in a second color space, different when ...".

The Office Action considered that "transparent if the pixel falls within a range of possible colors" corresponds to the term "transparent", based the description of MacInnis regarding Chroma Keying (Col. 14, lines 4-14, MacInnis). However, determining whether or not a pixel is transparent based on whether or not the color of the pixel falls within a specified range of colors has nothing to do with determining a behavior of "a first command" retrieved from a script written for "a first color space", where the behavior of "the first command" is "transparent when the first command generates similar results in the first color space and in a second color space". Whether or not the color of the pixel falls within a specified range of colors is not an indication of whether or not the pixel generates similar results in the first color space and in a second color space.

Further, in applying the element of "transparent if the pixel falls within a range of possible colors", the behavior of the pixel is considered. In MacInnis, a pixel is transparent because a color behind the pixel is visible. This is vastly different from "transparent when the first command generates similar results in the first color space and in a second color space". It is clearly inappropriate to ignore the explicit limitation of "when the first command generates similar results in the first color space and in a second color space" and to match only the word "transparent" without considering the meaning and the context.

Furthermore, when the element of "transparent if the pixel falls within a range of possible colors" is applied to the limitation of "determining a behavior of the first command, the behavior of the first command is: ..., transparent when the first command generates similar results in the first color space and in a second color space, ...", the behavior of the pixel is considered. Thus, when the behavior of the pixel is regarded as the behavior of "the first command", the Office Action was considering "a pixel" as "the first command" for this claim limitation; and the Office Action added a further inconsistent way of applying elements of MacInnis as "the first command", in addition to applying "a graphics system", "the CLUT data" and "the output of CLUT" as "the first command" in different segments of the same claim.

8.5.2.2.3: The term "different"

According to claim 1, "the behavior of the first command is: unique when..., transparent when ..., different when the first command generates different results in the first color space and in the second color space".

The Office Action considered that "multiple CLUTs are used with different graphics windows having graphics data with different CLUT formats" corresponds to the term "different". MacInnis (Col. 7, lines 35-39) describes an alternative embodiment, in which

"multiple CLUTs are used to process different graphics windows having graphics data with different CLUT formats".

However, the fact that MacInnis et al., as inventors of U.S. Patent 6,501,480, "recognized" / "acknowledged" / "took notice of" that there are multiple CLUTs used with different graphics windows having graphics data with different CLUT formats in an alternative embodiment of the U.S. Patent 6,501,480 has nothing to do with determining a behavior of "a first command" retrieved from a script written for "a first color space", where the behavior of "the first command" is different when the first command generates different results in "the first color space" and in "the second color space".

In applying the element of "multiple CLUTs are used with different graphics windows having graphics data with different CLUT formats", it is not clear what is considered as the "first command". "Different graphics windows" are different because the windows are compared to each other. "Different CLUT formats" are different because the formats are compared to each other. The characterization of "different graphics windows", or the characterization "different CLUT formats", is for multiple objects when they are compared to each other. "Different graphics windows" or "different CLUT formats" cannot be properly considered as "the first command". According to claim 1, the behavior of the first command is: different when the first command generates different results in the first color space and in the second color space.

It is clearly inappropriate to ignore the explicit limitation of "when the first command generates different results in the first color space and in the second color space" and to match only the word "different" without considering the meaning and the context.

8.5.2.2.4: Summary for the terms "behavior", "unique", "transparent" and "different"

The terms "behavior", "unique", "transparent" and "different" as construed in the Office Action were not according to the context of the specification and drawings and not

according to the limitations explicitly recited the claims. The "unique behavior", "transparent behavior", "different behavior" of elements of MacInnis, as interpreted by the Office Action, are actually the behaviors of different items, such as "a graphics system", "a pixel", "graphics windows", "CLUT formats", etc., which are not the behavior of the Color Look Up Table (CLUT) output. Thus, they are not consistent with the view of interpreting the variations of the Color Look Up Table (CLUT) output as the term behavior.

In the Office Action, various different elements of MacInnis, such as "a graphics system", "a pixel", "graphics windows", "CLUT formats", "CLUT output", "the CLUT data", etc., were inconsistently applied to the same limitation of "the first command" in considering different segments of one claim, which is illogical.

Further, some suggested interpretations of the terms are not in accordance with the context of the specification and drawings and the claim. For example, the fact that MacInnis et al., as inventors of U.S. Patent 6,501,480, disclose one embodiment having only one particular hardware component (e.g., one CLUT) and an alternative embodiment having multiple hardware components (e.g., multiple CLUTs) has nothing to do with the operations of a script engine parsing and executing the commands of a script.

In certain ways, it appears that the examiner recognized the significant differences between the CLUTs of MacInnis and the script processing of the present invention. For example, in response to Applicant's argument of:

> "Further, the behavior of CLUT as "unique", "transparent" or "different" as found in MacInnis does not correspond to the behavior of the first command recited in claim 1 (10, 19, or 28)." (Page 26 of the Applicant's response mailed March 17, 2004),

the Office Action pointed out that there is no citation of "the behavior of CLUT" within the claim language of said independent claims 1, 10, 19 or 28 (see, paragraphs 3-4 on page 9 of

Office Action mailed April 5, 2004). Because there is no citation of "the behavior of CLUT" within the claim language of said independent claims 1, 10, 19 or 28, the elements of the cited reference regarding the behavior of CLUT do not correspond to the claim limitations.

Thus, at least for the above reasons, the rejection of claim 1 under 35 U.S.C. §102(e) as being anticipated by MacInnis is clearly improper.

8.5.3 Group D2: Claims 10, 19, 28

Claims 10, 19, 28 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees.

Claims 10, 19, 28 were rejected based on the same elements of MacInnis cited for the rejection of claim 1. Since claims 10, 19, 28 recite some claim limitations similar to those of claim 1, the claims 10, 19, 28 are patentable over MacInnis at least for the reasons presented for claim 1.

Further, claim 10 recites: "A computer readable medium having stored thereon sequences of instructions which are executable by a digital processing system, and which, when executed by the digital processing system, cause the system to perform a method comprising: ...". MacInnis et al., as inventors of U.S. Patent 6,501,480, disclosing one embodiment having only one particular hardware component (e.g., one CLUT) and an alternative embodiment having only one particular hardware components (e.g., multiple CLUTs) are activities of MacInnis et al. as inventors, which are not operations performed by a digital processing system when sequences of instructions stored on a computer readable medium are executed by the digital processing system.

Similarly, claim 19 recites: "said processor operable to receive instructions which, when executed by the processor, cause the processor to perform a method comprising ...". MacInnis et al. are inventors for U.S. Patent No. 6,501,480, not a processor.

Similarly, claim 28 recites: "A computer system, comprising: ... meanings for determining a behavior of the first command ...". MacInnis et al. are inventors for U.S. Patent No. 6,501,480, not a portion of a computer system.

8.5.4 Group D3: Claims 37 and 47

Claims 37 and 47 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees.

Claims 37 and 47 were rejected based on the same elements of MacInnis cited for the rejection of claim 1. Since claims 37 and 47 recite some claim limitations similar to those of claim 1, claims 37 and 47 are patentable over MacInnis at least for the reasons presented for claim 1. In claims 37 and 47, the terms "behavior", "unique", "transparent" and "different" are not used. The explicit limitations of "operating only in the first color space", "generating similar results in the first color space and in a second color space", and "generating different results in the first color space and in the second color space" are used. For example, claim 37 recites:

> 37. A machine implemented method, comprising:
> retrieving a first command from a script written for a first color space;
> determining the first command to be one of:
> operating only in the first color space,
> generating similar results in the first color space and in a second color space, and
> generating different results in the first color space and in the second color space; and
> processing an operation associated with the first command in a preferred color space according to a result of said determining.

MacInnis does not show a machine implemented method in which an operation associated with a command of a script is processed according to the result of the command being determined to be one of: "operating only in the first color space", "generating similar results in the first color space and in a second color space", "generating different results in the first color space and in the second color space". MacInnis et al. disclosing, as inventors of U.S. Patent 6,501,480, one embodiment having only one particular hardware component (e.g., one CLUT) and an alternative embodiment having multiple particular hardware components (e.g., multiple CLUTs) and a pixel being determined to be transparent based on whether its color is in a specific range cannot be considered as a machine implemented method to determine a command of a script to be one of: "operating only in the first color space", "generating similar results in the first color space and in a second color space", "generating different results in the first color space and in the second color space".

Consider the high level construction of the claim. Claim 37 relates to a machine implemented method, which includes "retrieving a first command from a script ...", "determining the first command to be one of ..." and "processing an operation associated with the first command ... according to a result of said determining". The applied elements of MacInnis about the color look up table have nothing to do with the process of a script engine parsing and executing the commands of a script. These elements of MacInnis have nothing to do with examining a command of a script to determine a best approach to perform the operations associated with the command. The applied elements of MacInnis clearly do not fit in the context of the high level construction of the claim.

Now, if necessary, consider a more detailed level of the claim construction.

The data of the color look up table was applied in the Office Action as "a first command from a script". However, there is no evidence that the data of the color look up table of MacInnis is from a script. A person skilled in the art would not consider the data of

the color look up table of MacInnis as a command retrieved from a script. Considering the data of the color look up table of MacInnis as "a command from a script written for a first color space" is not in compliance with the requirement that "Office personnel **must** rely on the applicant's disclosure to properly determine the meaning of terms used in the claims".

Further, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Claim 37 requires "a script written for a first color space". The lack of "a script written for a first color space" in MacInnis also renders the rejection improper, since MacInnis does not show each and every aspect of the claim. Note that "a first color space" is referenced to in other claim limitations, such as "operating only in the first color space", "generating similar results in the first color space and in a second color space" and "generating different results in the first color space and in the second color space". The elements of applied references must also *consistently* have the same corresponding relations as specified in the claim. In the applied elements of the cited reference Applicant does not see such relations that are specified the claim construction.

Applicant respectfully submits that the application of "the data of the color look up table" as "a first command" is improper, as discussed above. However, to show reasons why the other applied elements do not properly correspond to the claim limitations, the following discussion will assume that "the data of the color look up table" is ***consistently*** applied as "a first command" in the analysis of other claim limitations.

Claim 37 recites "determining the first command to be one of ..." and "processing an operation associated with the first command in a preferred color space according to a result of said determining." It is understood that it is improper to apply the data of the color look up table of MacInnis as "a first command" in one claim segment of a claim and to substitute

something else as "the first command" in other claim segments of the same claim. Thus, in order to be a proper reference for the rejection under 35 U.S.C. §102(e), MacInnis must show "determining the data of the color look up table to be one of ..." and "processing an operation associated with the data of the color look up table in a preferred color space according to a result of said determining the data of the color look up table to be one of ...". Here, the term "the first command" in the claim language is replaced with "the data of the color look up table" in order to consistently apply "the data of the color look up table" of MacInnis as "first command". However, there is no evidence suggesting that MacInnis teaches "determining the data of the color look up table to be one of ..." and "processing an operation associated with the data of the color look up table in a preferred color space according to a result of said determining the data of the color look up table to be one of ...". A person skilled in the art can clearly see that "recognizing only one CLUT in a graphics system", "transparent if the pixel falls within a range of possible colors", and "multiple CLUTs are used with different graphics windows having graphics data with different CLUT formats" do not fit into the requirement for the anticipation of claim 37, if the data of the color look up table of MacInnis is consistently applied as the "first command".

Now, if necessary, consider a further more detailed level of the claim construction.

First, "recognizing only one CLUT in a graphics system" has nothing to do with determining whether a command of a script operates only in the first color space. The sense of uniqueness in "only one CLUT" is in the number of color look up tables, which is completely different from a "unique" command that operates only in the first color space, the color space in which the script is written for (Note that claim 37 recites "a first command from a script written for a first color space"). A person skilled in the art sees no correlation between "recognizing only one CLUT in a graphics system" and "determining the first command to be one of: operating only in the first color space, ...", especially when the data

of the color look up table is applied as the "first command". It is clear that "recognizing only one color look up table in a graphics system" cannot be properly considered as "determining the data of the color look up table to be one of: operating only in the first color space, ...".

The Office Action took the position that the fact of MacInnis et al. (the inventors of U.S. Patent No. 6,501,480) describing "In one embodiment of the present invention, there is only one CLUT" in U.S. Patent No. 6,501,480 is "recognizing only one CLUT in a graphics system", because these inventors acknowledge or take notice of the fact that there is only one CLUT in one embodiment of the invention in MacInnis (see, the last paragraph on page 8 of the Office Action mailed April 5, 2004). Applicant respectfully submits that such an action of MacInnis et al. cannot be a part of a machine implemented method, which includes "retrieving a first command from a script ...", "determining the first command to be one of ..." and "processing an operation associated with the first command ... according to a result of said determining". It is understood that MacInnis et al. are human beings, not a machine.

Next, "transparent if the pixel falls within a range of possible colors" has nothing to do with determining whether a command of a script generates similar results in the first color space and in a second color space. Col. 14, lines 3-14, of MacInnis relates to determining whether a pixel is transparent or opaque. A person skilled in the art understands that "determining whether a pixel is transparent or opaque" has nothing to do with "determining whether a command of a script generates similar results in the first color space and in a second color space". Since the data of the color look up table of MacInnis is applied as "a first command from a script", the lack of a description in MacInnis to show "determining the data of the color look up table to be one of: ..., generating similar results in the first color space and in a second color space, ..." renders the rejection improper. A person skilled in the art understands that "transparent if the pixel falls within a range of possible colors" would not support an assertion that MacInnis teaches "determining the data of the color look up

table to be one of: ..., generating similar results in the first color space and in a second color space, ...". Thus, the rejection of claim 37 under 35 U.S.C. 102(e) is clearly improper.

Next, "multiple CLUTs are used with different graphics windows having graphics data with different CLUT formats" has nothing to do with determining whether a command of a script generating different results in the first color space and in the second color space. Since the data of the color look up table of MacInnis is applied as "a first command from a script", the lack of a description in MacInnis to show "determining the data of the color look up table to be one of: ..., generating different results in the first color space and in the second color space" renders the rejection improper. Col. 7, lines 35-39, of MacInnis shows that "In an alternate embodiment, multiple CLUTs are used to process different graphics windows having graphics data with different CLUT formats." Applicant respectfully submits that such an action of MacInnis et al. to recognize/acknowledge/take notice an multiple-CLUT embodiment cannot be a part of a machine implemented method, which includes "retrieving a first command from a script ...", "determining the first command to be one of ..." and "processing an operation associated with the first command ... according to a result of said determining". It is understood that MacInnis et al. are human beings, not a machine.

Furthermore, there is not evidence that MacInnis (e.g., Col. 7, lines 14-25 and Col. 9, lines 5-23) shows "processing an operation associated with the first command in a preferred color space according to a result of said determining". MacInnis does not show "said determining" as specified in claim 37, as discussed above; MacInnis does not show a result of "said determining" as specified in claim 37; and MacInnis does not show "processing an operation associated with the first command in a preferred color space according to a result of said determining". This is especially clear when the data of the color look up table retrieved by a DMA in MacInnis is applied as a first command retrieved from a script.

Overall, MacInnis does not show a system in which a command in a script is processed according to the group the command belongs to, where the group is one of: "operating only in the first color space", "generating similar results in the first color space and in a second color space", "generating different results in the first color space and in the second color space".

8.5.5 Group D4: Claim 55

Claim 55 was rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees.

Claim 55 was rejected based on the same elements of MacInnis cited for the rejection of claims 1 and 37. Since claim 55 recites some claim limitations similar to those of claims 1 and 37, claim 55 is patentable over MacInnis at least for the reasons presented for claims 1 and 37.

Further, claim 55 recites:

55. A data processing system, comprising:
memory storing a script written for a first color space;
a processor coupled with the memory, the process retrieving a first command from the script stored in the memory, in response to the processor classifying the first command as one of:
operating only in the first color space,
generating similar results in the first color space and in a second color space, and
generating different results in the first color space and in the second color space,
the processor processing an operation associated with the first command in a preferred color space according to a result of classifying the first command.

MacInnis et al. disclosing, as inventors of U.S. Patent 6,501,480, one embodiment having only one particular hardware component (e.g., one CLUT) and an alternative embodiment having only one particular hardware components (e.g., multiple CLUTs) and a pixel being determined to be transparent based on whether its color is in a specific range cannot be consider as "in response to the processor classifying the first command as one of: ... the processor processing an operation associated with the first command in a preferred color space according to a result of classifying the first command." The operation of the integrated circuit of MacInnis is not ***in response to*** MacInnis et al. disclosing the subject matter of U.S. Patent 6,501,480. Since MacInnis et al. are not a processor, the rejection is clearly improper.

8.5.6 Group D5: Claim 64

Claim 64 was rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees.

Claim 64 was rejected based on the same elements of MacInnis cited for the rejection of claims 1 and 37. Since claim 64 recites some claim limitations similar to those of claims 1 and 37, claim 64 is patentable over MacInnis at least for the reasons presented for claims 1 and 37.

Further, claim 64 recites:

64. A computer system, comprising:
means for retrieving a first command from a script written for a first color space;
means for examining to determine the first command is which one of:
operating only in the first color space,
generating similar results in the first color space and in a second color space, and
generating different results in the first color space and in the second color space; and

means for processing an operation associated with the first command in a preferred color space according to a result of said means for examining to determine.

MacInnis et al. disclosing, as inventors of U.S. Patent 6,501,480, one embodiment having only one particular hardware component (e.g., one CLUT) and an alternative embodiment having only one particular hardware components (e.g., multiple CLUTs) and a pixel being determined to be transparent based on whether its color is in a specific range cannot be consider as "means for examining to determine the first command is which one of: ..." of a computer system. MacInnis et al. are not a portion of a computer system. The integrated circuit of MacInnis does not have means for ***examining to determine the first command is which one of***: operating only in the first color space, generating similar results in the first color space and in a second color space, and generating different results in the first color space and in the second color space.

8.5.7 Group D6: Claims 2, 11, 20, 29, 38, 47, 56, 65

Claims 2, 11, 20, 29, 38, 47, 56, 65 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 38, for example, further recites:

38. The method of claim 37, further comprising:
determining the preferred color space for the operation associated with the first command to minimize color space conversion.

The rejection for the additional limitation recited in claim 38 was based on the description of MacInnis (Col. 41, lines 11-23; Figure 4; Cols. 6-7; and Col. 42, lines 13-21). Col. 41, lines 11-23, shows the motivation to introduce a video scaler in the circuit system; Figure 4 shows a video scaler (104) which is completely separate from the convert 90 and the CLUT 92;

Cols. 6-7 provide a description of Figure 4; and Col. 42, lines 13-21, show the design preferences, that

> "The video windows are preferably always in YUV format, although they can be in either 4:2:2 or 4:2:0 variants of YUV. Alternatively they can be in RGB or other formats."

However, this design choice is fixed once the circuit is implemented. The circuit does not determine which format to use for the operation associated with the first command. It is clear that the circuit of MacInnis determines no preferred color space for the operation associated with the first command. According to MacInnis, the preferred color space for the view windows is preferably fixed (e.g., always in YUV format).

Further, the design choice, as the mental activity of a designer, cannot be considered as a part of a machine implemented method.

8.5.8 Group D7: Claims 3, 12, 21, 30, 39, 48, 57, 66

Claims 3, 12, 21, 30, 39, 48, 57, 66 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 39, for example, further recites:

> 39. The method of claim 38, wherein the preferred color space is the second color space when data of at least one of input buffers and output buffers is in the second color space.

The rejection for the additional limitation recited in claim 39 was based on the description of MacInnis (Col. 7, lines 14-25; Col. 9, lines 5-23, Col. 41, lines 1-21; Figures 4 and 24). The Office Action asserted that MacInnis teaches, "different windows can be in different formats and are captured in the memory" and "up scaling and down scaling and blending through

image processing commands and storing". MacInnis teaches an integrated circuit for graphics processing. Applicant respectfully assumes that the Office Action was considering the functional blocks of Figure 4 as image processing commands. The functional blocks interpreted as image processing commands are completely different from the image processing commands retrieved from a ***script***. Further, the "different windows can be in different formats" is clearly not sufficient to anticipate the limitation of a particular way to determine a preferred color space for the operation of a commands retrieved from a ***script***:

> "the preferred color space is the second color space when data of at least one of input buffers and output buffers is in the second color space"

8.5.9 Group D8: Claims 4, 13, 22, 31, 40, 49, 58, 67

Claims 4, 13, 22, 31, 40, 49, 58, 67 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 40, for example, further recites:

> 40. The method of claim 37, wherein said processing comprises: converting data in one input buffer to the preferred color space.

The rejection for the additional limitation recited in claim 40 was based on the description of MacInnis (Figure 5 and Col. 9, lines 5-23). However, MacInnis does not show that the conversion to the preferred color space which is according to a result of said determining. Note that claim 37 recites, "processing an operation associated with the first command in a preferred color space according to a result of said determining". A color space preferred as a design choice is not "a preferred color space according to a result of said determining". Clearly, MacInnis does not show the particular fashion of converting data as recited in claim 40.

8.5.10 Group D9: Claims 5, 14, 23, 32, 41, 50, 59, 68

Claims 5, 14, 23, 32, 41, 50, 59, 68 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 41, for example, further recites:

> 41. The method of claim 37, wherein when the first command is determined to be operating only in the first color space, the preferred color space is the first color space.

The rejection for the additional limitation recited in claim 41 was based on the description of MacInnis (Col. 7, lines 24-35; Figures 10-11; and Col. 24-25). The circuit of MacInnis does not determine whether or not the color look up table data operates only in the first color space. MacInnis does not show the determination of a preferred color space based on whether or not the first command operates only in the first color space.

8.5.11 Group D10: Claims 6, 15, 24, 33, 42, 51, 60, 69

Claims 6, 15, 24, 33, 42, 51, 60, 69 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 42, for example, further recites:

> 42. The method of claim 37, wherein when the first command is determined to be generating different results in the first color space and in the second color space, the first command is transformed to a second command in the second color space; wherein the second command performs a similar operation in the second color space as the first command in the first color space.

The rejection for the additional limitation recited in claim 42 was based on the description of MacInnis (Col. 7; Col. 9, lines 5-34; and Col. 14). The Office Action asserted that MacInnis

teaches "using different graphics windows having graphic data with different CLUT formats and performing similar imaging processing operations e.g., blending as shown in Figure 4" and "through various converters with different and similar formats". However, the use of different converters for different formats is clearly insufficient to anticipate the operation of transforming the first command to a second command. Considering that the Color Look Up Table data as the "first command", for example (since the Office Action has numerous inconsistent elements for "the first command", the CLUT data is used here as an example), it is very clear that MacInnis does not show transform one Color Look Up Table data into another Color Look Up Table data, ***when*** the original Color Look Up Table data is determined to be generating different results in the first color space and in the second color space.

8.5.12 Group D11: Claims 7, 16, 25, 34, 43, 52, 61, 70

Claims 7, 16, 25, 34, 43, 52, 61, 70 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 43, for example, further recites:

> 43. The method of claim 42, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space.

The rejection for the additional limitation recited in claim 43 was based on the description of MacInnis (Figures 5 and 10; Col. 9). The Office Action asserted that MacInnis teaches "different converters e.g., blocks 136 and 134 performing similar operations which are fed into blocks 138 and are blended in block 140". However, the Office Action merely pointed

to the elements of MacInnis to partially match the phrase "similar operation" in isolation. Figures 5 and 10 are functional block diagrams of IC circuits. The blocks of circuits, as interpreted as image processing commands in the Office Action, are clearly different from commands from a script. When viewed together, it is clear that neither circuit block 136 can be considered a command transformed from circuit block 134, no circuit block 134 can be considered a command transformed from circuit block 134. Further, if the circuit blocks were interpreted as image processing commands, it would not be clear what were the parameters of these commands. The graphics image data processed by the circuit blocks are not the parameters. There is no description of transformation of parameters of circuit blocks in MacInnis. MacInnis does not show how to convert the parameters of these commands. Furthermore, when the Office Action interpreting one of the blocks of circuits (blocks 134 and 136) as the first command, the Office Action added a further inconsistent way of applying elements of prior art to the limitation of "the first command". Thus, these functional blocks processing data according to pre-designed logic is clearly insufficient to show the operation of transforming parameters of one original command, which is retrieved from a script, to comparable parameters for a substitutive command, which is transformed from the original command.

8.5.13 Group D12: Claims 8, 17, 26, 35, 44, 53, 62, 71

Claims 8, 17, 26, 35, 44, 53, 62, 71 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 44, for example, further recites:

> 44. The method of claim 43, wherein the comparable parameters are compatible with the preferred color space.

The rejection for the additional limitation recited in claim 44 was based on the description of MacInnis (Figures 5 and 10; Col. 9, lines 35-48). The Office Action asserted that MacInnis teaches "converter 138 has the same parameters with the same format". However, block 138 is a YUV444-to-YUV422 converter, which converts graphics data from YUV 4:4:4 format to YUV 4:2:2 format. MacInnis (Col. 9, lines 35-48) shows:

> "Graphics data in YUV 4:4:4 format and YUV 4:2:2 format preferably also includes four alpha values for every four samples. Graphics data in YUV 4:4:4 format with four alpha values for every four samples may be referred to as being in aYUV 4:4:4:4 format; graphics data in YUV 4:2:2 format with four alpha values for every four samples may be referred to as being in a YUV 4:4:2:2 format."

It is not apparent how this description of MacInnis might relate to the claim limitation and the subject matter of the claim. Converter 138 converts the graphics data from one format to another. There are no apparent parameters for converter 138. YUV 4:4:4 format is different from YUV 4:2:2 format, which cannot be call the same format. MacInnis does not show converting parameters in a particular way as recited in claim 44. Considering converter 138 as "the first command" there would add another inconsistent view of "the first command".

8.5.14 Group D13: Claims 9, 18, 27, 36, 45, 54, 63, 72

Claims 9, 18, 27, 36, 45, 54, 63, 72 were rejected under 35 U.S.C. §102(e) as being anticipated by MacInnis (U.S. Patent No. 6,501,480). Applicant respectfully disagrees. Claim 45, for example, further recites:

> 45. The method of claim 42, wherein if one or more parameters of the first command cannot be transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first

color space, the first command is processed as if the first command operates only in the first color space.

The rejection for the additional limitation recited in claim 44 was based on the description of MacInnis (Figures 5 and 10; Cols. 23-24). The Office Action asserted that MacInnis teaches "the usage of only one CLUT". However, "the usage of only CLUT" has no resemblance to the further claim limitation recited in claim 45. In claim 45, the first command is transformed to a second command in the second color space when the first command is determined to be generating different results in the first color space and in the second color space (see, e.g., claim 42); when one or more parameters of the first command cannot be transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space, the first command is processed as if the first command operates only in the first color space. According to the Office Action, "when the first command is determined to be generating different results in the first color space and in the second color space" corresponds to the usage of "multiple CLUTs". The usage of "multiple CLUT" is clearly in conflict with the usage of "only one CLUT". These are in different, alternative embodiments of U.S. Patent No. 6,501,480. The disclosure of the design choice of using either "only one CLUT" or "multiple CLUTs" is clearly insufficient to anticipate a particular script processing method, as recited in claim 45.

8.5.15 Summary:

The Office Action completely failed to view the subject matter as claimed as a whole. In the Office Action, the elements of MacInnis were patched up inconsistently to only partially match a few selected phrases in the claims one at a time in isolation. When viewed as a whole in a consistent and meaningful way, the elements of MacInnis as applied in the

Office Action are substantially irrelevant with respect to the subject matter of the pending claims.

Please charge any shortages or credit any overages to Deposit Account No. 02-2666. Furthermore, if an extension is required, applicant hereby requests such extension.

Respectfully submitted,

Date: 9/7, 2004

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APPENDIX

The claims involved in the appeal are listed below.

1. A method, comprising:

retrieving a first command from a script written for a first color space;

determining a behavior of the first command, wherein the behavior of the first command is:

unique when the first command operates only in the first color space,

transparent when the first command generates similar results in the first color space and in a second color space, and

different when the first command generates different results in the first color space and in the second color space; and

processing an operation associated with the first command in a preferred color space according to the behavior of the first command.

2. The method of claim 1, wherein the preferred color space is determined to minimize color space conversion.

3. The method of claim 1, wherein the preferred color space is the second color space when data of at least one of input buffers and output buffers is in the second color space.

4. The method of claim 1, wherein said processing comprises converting data in one input buffer to the preferred color space.

5. The method of claim 1, wherein when the behavior of the first command is unique, the preferred color space is the first color space.

6. The method of claim 1, wherein when the behavior of the first command is different, the first command is transformed to a second command in the second color space, wherein the second command performs a similar operation in the second color space as the first command in the first color space.

7. The method of claim 6, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space.

8. The method of claim 7, wherein the comparable parameters are compatible with the preferred color space.

9. The method of claim 7, wherein if the one or more parameters of the first command cannot be transformed to comparable parameters for the second command, the first command is processed as if the behavior of the first command is unique.

10. A computer readable medium having stored thereon sequences of instructions which are executable by a digital processing system, and which, when executed by the digital processing system, cause the system to perform a method comprising:

retrieving a first command from a script written for a first color space;

determining a behavior of the first command, wherein the behavior of the first command is:

unique when the first command operates only in the first color space,

transparent when the first command generates similar results in the first color space and in a second color space, and

different when the first command generates different results in the first color space and in the second color space; and

processing an operation associated with the first command according to the behavior of the first command.

11. The computer readable medium of claim 10, wherein a preferred color space is determined to minimize color space conversion in processing the operation associated with the first command.

12. The computer readable medium of claim 10, wherein said processing the operation associated with the first command is in the second color space when data of at least one of input buffers and output buffers is in the second color space.

13. The computer readable medium of claim 10, wherein said processing comprises converting data in one input buffer to a preferred format.

14. The computer readable medium of claim 10, wherein when the behavior of the first command is unique, said processing the operation associated with the first command is in the first color space.

15. The computer readable medium of claim 10, wherein when the behavior of the first command is different, the first command is transformed to a second command in the second color space, wherein the second command performs a similar operation in the second color space as the first command in the first color space.

16. The computer readable medium of claim 15, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space.

17. The computer readable medium of claim 16, wherein the comparable parameters are compatible with the second color space.

18. The computer readable medium of claim 16, wherein if the one or more parameters of the first command cannot be transformed to comparable parameters for the second command, the first command is processed as if the behavior of first command is unique.

19. A computer system comprising:

a bus;

a data storage device coupled to said bus; and

a processor coupled to said data storage device, said processor operable to receive instructions which, when executed by the processor, cause the processor to perform a method comprising:

retrieving a first command from a script written for a first color space;

determining a behavior of the first command, wherein the behavior of the first command is:

unique when the first command operates only in the first color space,

transparent when the first command generates similar results in the first color space and in a second color space, and

different when the first command generates different results in the first color space and in the second color space; and

processing an operation associated with the first command in a preferred color space according to the behavior of the first command.

20. The computer system of claim 19, wherein the preferred color space is determined to minimize color space conversion.

21. The computer system of claim 19, wherein the preferred color space is the second color space when data of at least one of input buffers and output buffers is in the second color space.

22. The computer system of claim 19, wherein said processing comprises converting data in one input buffer to the preferred color space.

23. The computer system of claim 19, wherein when the behavior of the first command is unique, the preferred color space is the first color space.

24. The computer system of claim 19, wherein when the behavior of the first command is different, the first command is transformed to a second command in the second color space, wherein the second command performs a similar operation in the second color space as the first command in the first color space.

25. The computer system of claim 24, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space using the comparable parameters as the first command in the first color space.

26. The computer system of claim 25, wherein the comparable parameters are compatible with the preferred color space.

27. The computer system of claim 25, wherein if the one or more parameters of the first command cannot be transformed to comparable parameters for the second command, the first command is processed as if the behavior of the first command is unique.

28. A computer system, comprising:
means for retrieving a first command from a script written for a first color space;
means for determining a behavior of the first command, wherein the behavior of the first command is:

unique when the first command operates only in the first color space,

transparent when the first command generates similar results in the first color space and in a second color space, and

different when the first command generates different results in the first color space and in the second color space; and

means for processing an operation associated with the first command according to the behavior of the first command.

29. The computer system of claim 28, wherein a preferred color space is determined to minimize color space conversion in processing the operation associated with the first command.

30. The computer system of claim 28, wherein the operation associated with the first command is processed in the second color space when data of at least one of input buffers and output buffers is in the second color space.

31. The computer system of claim 28, wherein means for processing comprises means for converting data in one input buffer to a preferred format.

32. The computer system of claim 28, wherein when the behavior of the first command is unique, the operation associated with the first command is processed in the first color space.

33. The computer system of claim 28, wherein when the behavior of the first command is different, the first command is transformed to a second command in the second color

space, wherein the second command performs a similar operation in the second color space as the first command in the first color space.

34. The computer system of claim 33, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space using the comparable parameters as the first command in the first color space.

35. The computer system of claim 34, wherein the comparable parameters are compatible with the second color space.

36. The computer system of claim 34, wherein if the one or more parameters of the first command cannot be transformed to comparable parameters for the second command, the first command is processed as if the behavior of the first command is unique.

37. A machine implemented method, comprising:

retrieving a first command from a script written for a first color space;

determining the first command to be one of:

operating only in the first color space,

generating similar results in the first color space and in a second color space, and

generating different results in the first color space and in the second color space; and

processing an operation associated with the first command in a preferred color space according to a result of said determining.

38. The method of claim 37, further comprising:

determining the preferred color space for the operation associated with the first command to minimize color space conversion.

39. The method of claim 38, wherein the preferred color space is the second color space when data of at least one of input buffers and output buffers is in the second color space.

40. The method of claim 37, wherein said processing comprises:

converting data in one input buffer to the preferred color space.

41. The method of claim 37, wherein when the first command is determined to be operating only in the first color space, the preferred color space is the first color space.

42. The method of claim 37, wherein when the first command is determined to be generating different results in the first color space and in the second color space, the first command is transformed to a second command in the second color space; wherein the second command performs a similar operation in the second color space as the first command in the first color space.

43. The method of claim 42, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second

command performs the similar operation in the second color space as the first command in the first color space.

44. The method of claim 43, wherein the comparable parameters are compatible with the preferred color space.

45. The method of claim 42, wherein if one or more parameters of the first command cannot be transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space, the first command is processed as if the first command operates only in the first color space.

46. A machine readable medium containing executable computer program instructions which when executed by a data processing system cause said system to perform a method, comprising:

retrieving a first command from a script written for a first color space;

identifying the first command as one of:

operating only in the first color space,

generating similar results in the first color space and in a second color space, and

generating different results in the first color space and in the second color space; and

processing an operation associated with the first command in a preferred color space according to a result of said identifying.

47. The medium of claim 46, wherein the method further comprises:
determining the preferred color space for the operation associated with the first command to minimize color space conversion.

48. The medium of claim 47, wherein the preferred color space is the second color space when data of at least one of input buffers and output buffers is in the second color space.

49. The medium of claim 46, wherein said processing comprises:
converting data in one input buffer to the preferred color space.

50. The medium of claim 46, wherein when the first command is identified as operating only in the first color space, the preferred color space is the first color space.

51. The medium of claim 46, wherein when the first command is identified as generating different results in the first color space and in the second color space, the first command is transformed to a second command in the second color space; wherein the second command performs a similar operation in the second color space as the first command in the first color space.

52. The medium of claim 51, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space.

53. The medium of claim 52, wherein the comparable parameters are compatible with the preferred color space.

54. The medium of claim 51, wherein if one or more parameters of the first command cannot be transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space, the first command is processed as if the first command is identified as operating only in the first color space.

55. A data processing system, comprising:

memory storing a script written for a first color space;

a processor coupled with the memory, the process retrieving a first command from the script stored in the memory, in response to the processor classifying the first command as one of:

operating only in the first color space,

generating similar results in the first color space and in a second color space, and

generating different results in the first color space and in the second color space,

the processor processing an operation associated with the first command in a preferred color space according to a result of classifying the first command.

56. The system of claim 55, wherein the processor further determines the preferred color space for the operation associated with the first command to minimize color space conversion.

57. The system of claim 56, wherein the preferred color space is the second color space when data of at least one of input buffers and output buffers is in the second color space.

58. The system of claim 55, wherein in processing the operation associated with the first command, the processor converts data in one input buffer to the preferred color space.

59. The system of claim 55, wherein when the first command is classified as operating only in the first color space, the preferred color space is the first color space.

60. The system of claim 55, wherein when the first command is classified as generating different results in the first color space and in the second color space, the first command is transformed to a second command in the second color space; wherein the second command performs a similar operation in the second color space as the first command in the first color space.

61. The system of claim 60, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space.

62. The system of claim 61, wherein the comparable parameters are compatible with the preferred color space.

63. The system of claim 60, wherein if one or more parameters of the first command cannot be transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space, the first command is re-classified as operating only in the first color space.

64. A computer system, comprising:

means for retrieving a first command from a script written for a first color space;

means for examining to determine the first command is which one of:

operating only in the first color space,

generating similar results in the first color space and in a second color space, and

generating different results in the first color space and in the second color space; and

means for processing an operation associated with the first command in a preferred color space according to a result of said means for examining to determine.

65. The computer system of claim 64, further comprising:

means for determining the preferred color space for the operation associated with the first command to minimize color space conversion.

66. The computer system of claim 65, wherein the preferred color space is the second color space when data of at least one of input buffers and output buffers is in the second color space.

67. The computer system of claim 64, wherein said means for processing comprises: means for converting data in one input buffer to the preferred color space.

68. The computer system of claim 64, wherein when the first command operates only in the first color space, the preferred color space is the first color space.

69. The computer system of claim 64, wherein when the first command generates different results in the first color space and in the second color space, the first command is transformed to a second command in the second color space; wherein the second command performs a similar operation in the second color space as the first command in the first color space.

70. The computer system of claim 69, wherein one or more parameters of the first command are transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space.

71. The computer system of claim 70, wherein the comparable parameters are compatible with the preferred color space.

72. The computer system of claim 69, wherein if one or more parameters of the first command cannot be transformed to comparable parameters for the second command such that the second command performs the similar operation in the second color space as the first command in the first color space, the first command is processed as if the first command operates only in the first color space.